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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,829	05/01/2001	Hardarshan S. Valia	ISP00	4969
27187	7590	01/10/2006	EXAMINER	
BAKER & DANIELS LLP 205 W. JEFFERSON BOULEVARD SUITE 250 SOUTH BEND, IN 46601			BHAT, NINA NMN	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/846,829

Applicant(s)

VALIA ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11-3-2005 has been entered.
2. Claims pending are claims 1-3 and 5-18. The examiner acknowledges that independent claims 1, 7 and 14, now include an apparent specific gravity of about 1.05.
3. The examiner has fully and carefully considered applicant's arguments and amendments but is not persuaded by applicant's arguments.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. Claims 1-3 and 5-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brayton et al. US Patent 4,186,054 in view of "Coke Production For Blast Furnace Ironmaking" by Valia.

Brayton et al. teach a method of producing blast furnace coke by compacting finely divided coal into a compact such that the bulk density is sufficiently increased to be capable of conversion into coke. The compacted coal cake is then carbonized in an oven, which provides coke, which is suitable for use in steel making production.[Note Column 2, lines 15-60]. The compacting means as taught by Brayton et al. can be in any form suitable for compacting the finely dived coal to achieve the desired coal compact. The preferred method of compacting is by suing briquetting rolls but is not limited only to briquetting for compaction. The compact of coal is binderless and after compaction the compact is placed into a coking oven wherein the coal compact is carbonized to coke. Brayton et al. teach that the finely divided coal has properties which allows it upon high pressure compaction to develop strong cohesive forces between the coal particles to produce coal compacts of a specific gravity of at least 1.1 and more preferably such tat upon controlled handling allows the compacts to partially break up into broken compacts, the individual broken compacts generally maintain the increased density achieved in the compaction step. The breaking step of the process maybe e carried out by any suitable means to achieve the desired high bulk density in the carbonizing means.[Note Column 4, lines 6-20].

However, Brayton et al. does not teach that the coke has an apparent specific gravity of about 1.05, which has been claimed.

Valia teaches in "Coke Production For Blast Furnace Ironmaking", that blast furnace coke involves a process of carbonizing coal to high temperatures in an oxygen deficient atmosphere in order concentrate the carbon in commercially known by product coke making ovens and Non-recovery coke oven. Valia teaches that prior to making coke there are required essential steps, which are required which includes the type and selection of coals from certain mines, oiling and pulverization and then compacting for obtaining desired density. Valia teaches using non-recovery ovens for carbonizing the coal into coke, and the difference in whether one of ordinary skill in the art would use a non-recovery oven or by product coke making or heat recovery oven coke making, the difference rest in what is happening to heat utilized in carbonizing the coke, not in how the coal is carbonized to coke, to use any oven would provide an equivalent product this is taught in by Valia. Valia further teaches that factors which effect coking quality is basically directed to the type of coal blends used and its physical and chemical properties that can vary within narrow limits. Also other factors include not exerting a high coke oven wall pressure.[Note all 5 pages]

With respect to applicant's limitations in claim 13 that the Brayton does not each discharging a single mass of coal into the oven for heating, Brayton teaches breaking in order to provide a desired density which is equivalent to the compact density of the loose coal, and the broken pieces can be broadly interpreted as a single mass, it need not be a single compact. Brayton does not require the breaking step, is merely desired so that he can obtain a desired density of the coal compact the compacted briquettes can be carbonized directly. Brayton et al. does not provide a container wherein the

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vertical dimension of volume is smaller than the horizontal dimension of the container, Brayton et al. does suggestion that the compaction means is not critical and can include any means for compacting the coal, which would include a container having the specific dimensions as claimed by applicant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a compaction container as claimed where there is a specific suggestion in the art to provide means for compaction which provide a compacted coal having a density which is greater than that of the loose coal. The reason for compacting, i.e., to product a uniform density coal compact which is then introduced into a coke oven taught by Brayton et al. is the same reason as claimed by applicant, the means to effect compaction by any means has been discussed and suggested by Brayton et al. thus to provide compaction container or container for containing the loose coal so that it may be compressed or compacted to provide a compacted coal product having a density which is greater than that of the loose coal renders applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

It is maintained that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a process of making metallurgical coke from the teachings of Brayton et al. which compacts a volume of loose coal wherein the force applied to the volume of loose coal process volume of compacted coal having a density which is great than that of the loose coal and then heating the volume of compacted coal.to produce coke, this has been taught in Brayton et al. Brayton et al. admittedly does not use a container, disposing a volume of loose coal in

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the container, and then applying the force onto the container, how compaction is effected is not critical to Brayton et al. and teaches that any type of compaction device is applicable and operable. Brayton et al. teaches that the type and selection of coal is important in making the compact and the compact prior to carbonization can be handled to provide a desired resultant density, Brayton et al. teaches that after carbonization the density of the coke is important in making a metallurgical coke suitable for blast furnace use as discussed above. Valia teaches in coke production for blast furnace iron making, that coal selection is an important criteria in making metallurgical grade coke as well as other factors such as compacting and carbonizing, however, the use of a non-heat recovery coke making oven does not impart significant characteristics to the coke produced but rather how to use or re-use or by-product the heat which is used in the carbonizing process, Valia teaches that all coke ovens heat recovery, non-recovery, by product ovens are equivalent for carbonizing. It would have been obvious from the teachings of Brayton et al. and Valia that applicant's process has been fairly taught and suggested although applicant has argued that the use of the non-recovery oven using a container etc, in the non-recovery oven is different than Brayton, the coke produced would have an apparent specific gravity within the range as claimed by applicant and applicant absent criticality in showing. From the teachings of Valia, one of ordinary skill in the art would not be persuaded that using a non-recovery oven in producing coke would yield a product far superior than using a by-product oven. Applicant is again advised that arguments are not evidence that the blast furnace coke of Brayton et al. may not recite the apparent specific gravity after carbonizing, the coke formed is

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suitable for use in a blast furnace and there are requires AISI standards which need to be complied with in order to produce a viable coke for use in steelmaking.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eatough et al. teach blast furnace fuel from reclaimed carbonaceous materials and related methods. Aoki et al. teach process for preparing coke and carbonizing. Eatough et al.'628 teach a closed apparatus and process for the production of clean coke. Wilde teaches a method of making metallurgical coke.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
N. Bhat  
Primary Examiner  
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